GRADATION FOR WMM
(As per MORT&H 400-11)

TEJUS CONSULTANTS

Name of Work	:	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Nagineni Muniswmynaidu Krishnamurthy.
Date of Testing	:	19.07.18
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	19.07.18
Type of material & Purpose:	WMM	**Date of testing:**	19.07.18
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	615	615	6.15	93.85	95-100
22.4	2526	3141	31.41	68.59	60-80
11.2	1786	4927	49.27	50.73	40-60
4.75	1459	6386	63.86	36.14	25-40
2.36	1355	7741	77.41	22.59	15-30
0.6	869	8610	86.10	13.90	8.0-22.0
0.075	842	9452	94.52	5.48	0-8
Pan	548				
Total	10000				

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

TEJUS CONSULTANTS

Authorised Signatory

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Nagineni Muniswmynaidu Krishnamurthy.

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	19.07.2018
		Date of Testing	19.07.2018

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	860	78	782	50
16.0	12.5	1200	117	1083	120
12.5	10.0	453	76	377	62
10.0	6.3	500	65	435	38
Total		**3013**	**336**	**2677**	**270**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.15	
Elongation Index(%):	10.09	
Combined FI+EL (%)	21.24	

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Nagineni Muniswmynaidu Krishnamurthy.		
Proposed Use	WMM	**Date of Sampling**	**19.07.2018**
Sample Location	**At plant**	**Date of Testing**	**19.07.2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	355.00	348.00	350.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	270.00	278.00	275.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	85.00	70.00	75.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	23.94	20.11	21.43	
5	Average Aggregate impact value	(%)	21.83			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

TEJUS CONSULTANTS
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Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Nagineni Muniswmynaidu Krishnamurthy.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	20.07.2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6162	6110	6208
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9736	9732	9715
Wt. of sand in cone (w3) gms.	835	842	830
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3429	3426	3455
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.35	2.35	2.35
Moisture meter reading(moisture content)	12.45	12.56	12.57
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.09	2.09
MDD	2.13	2.13	2.13
OMC	12.60%	12.60%	12.60%
% of Compaction Obtained	98.28	98.19	98.17
Compaction Required	98%	98%	98%

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Project Division
Yelahanka Zone
Bangalore

Project	**1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.**
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**
Consultant	**M/s Tejus Consultants**
Contractor	**Nagineni Muniswmynaidu Krishnamurthy.**

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	**20.07.2018**
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6165	6118	6209
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9738	9732	9715
Wt. of sand in cone (w3) gms.	835	842	830
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3427	3426	3455
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36	2.35
Moisture meter reading(moisture content)	12.45	12.56	12.57
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.10	2.09	2.09
MDD	2.13	2.13	2.13
OMC	12.60%	12.60%	12.60%
% of Compaction Obtained	98.39	98.32	98.18
Compaction Required	98%	98%	98%

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Nagineni Muniswmynaidu Krishnamurthy		
Proposed Use	WMM	**Date of Sampling**	**27.07.2018**
Sample Location	**At plant**	**Date of Testing**	**27.07.2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	358.00	349.00	350.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	271.00	279.00	275.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	87.00	70.00	75.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	24.30	20.06	21.43	
5	Average Aggregate impact value	(%)	21.93			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Nagineni Muniswmynaidu Krishnamurthy.
Date of Testing	:	27.07.18
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	27.07.18
Type of material & Purpose:	WMM	**Date of testing:**	27.07.18
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	620	620	6.20	93.80	95-100
22.4	2563	3183	31.83	68.17	60-80
11.2	2789	5972	59.72	40.28	40-60
4.75	1436	7408	74.08	25.92	25-40
2.36	1361	8769	87.69	12.31	15-30
0.6	867	9636	96.36	3.64	8.0-22.0
0.075	20	9656	96.56	3.44	0-8
Pan	344				
Total	10000				

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Nagineni Muniswmynaidu Krishnamurthy.

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	27.07.2018
		Date of Testing	27.07.2018

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	854	77	777	52
16.0	12.5	1200	119	1081	-123
12.5	10.0	451	79	372	62
10.0	6.3	500	65	435	38
Total		**3005**	**340**	**2665**	**275**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.31	
Elongation Index(%):	10.32	
Combined FI+EL (%)	21.63	

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Project	**1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.**
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**
Consultant	**M/s Tejus Consultants**
Contractor	**Nagineni Muniswmynaidu Krishnamurthy.**

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	**28.07.2018**		
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6165	6112	6211
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9736	9732	9715
Wt. of sand in cone (w3) gms.	835	842	830
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3429	3426	3455
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.35	2.35
Moisture meter reading(moisture content)	12.45	12.56	12.57
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.09	2.09
MDD	2.13	2.13	2.13
OMC	12.60%	12.60%	12.60%
% of Compaction Obtained	98.33	98.22	98.22
Compaction Required	98%	98%	98%

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TEJUS CONSULTANTS

Authorised Signatory

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Nagineni Muniswmynaidu Krishnamurthy.

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	28.07.2018
Layer no. or level	WMM I layer
Depth of hole	250mm

	1	2	3
Field density:			
Wt. of wet material from hole (Ww) gms.	6158	6119	6208
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9736	9732	9715
Wt. of sand in cone (w3) gms.	835	842	830
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3429	3426	3455
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.35	2.36	2.35
Moisture meter reading(moisture content)	12.45	12.56	12.57
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.09	2.09
MDD	2.13	2.13	2.13
OMC	12.60%	12.60%	12.60%
% of Compaction Obtained	98.22	98.33	98.17
Compaction Required	98%	98%	98%

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Authorised Signatory

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Name of Work	:	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Nagineni Muniswmynaidu Krishnamurthy
Date of Testing	:	01.11.2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	01.11.2018
Type of material & Purpose:	BC	Date of testing:	01.11.2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	135	135.0	11.25	88.75	79 - 100
9.50	110	245.0	20.42	79.58	71 - 95
4.75	225	470.0	39.17	60.83	53 - 71
2.360	125	595.0	49.58	50.42	42 - 58
1.180	135	730.0	60.83	39.17	34 - 48
0.600	110	840.0	70.00	30.00	26 - 38
0.300	125	965.0	80.42	19.58	18 - 28
0.150	65	1030.0	85.83	14.17	12 - 20
0.075	100	1130.0	94.17	5.83	4 - 10
Pan	70.0				
Total	1200.0				

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Authorised Signatory

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Nagineni Muniswmynaidu Krishnamurthy
Date of Testing :	02.11.2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	865	795
2. Weight of Mixture after extraction, g	820	754
3. Weight of Bitumen	45	41
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.40	1.70
7. Weight of Bitumen & fines	46.40	42.70
8. Bitumen content in %	5.36	5.37
9. Average Bitumen content in %	**5.37**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	02.11.2018
Type of material & Purpose:	**BC**	Date of testing:	02.11.2018
		Oven Dry Wt.(gms):	820.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	98	98.0	11.95	88.05	79 - 100
9.50	102	200.0	24.39	75.61	71 - 95
4.75	111	311.0	37.93	62.07	53 - 71
2.360	116	427.0	52.07	47.93	42 - 58
1.180	82	509.0	62.07	37.93	34 - 48
0.600	60	569.0	69.39	30.61	26 - 38
0.300	78	647.0	78.90	21.10	18 - 28
0.150	51	698.0	85.12	14.88	12 - 20
0.075	60	758.0	92.44	7.56	4 - 10
Pan	62.0				
Total	820.0				

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Nagineni Muniswmynaidu Krishnamurthy
Date of Testing :	02.11.2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	849	852
2. Weight of Mixture after extraction, g	800	807
3. Weight of Bitumen	49	45
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	1.40	1.70
7. Weight of Bitumen & fines	50.40	46.70
8. Bitumen content in %	5.94	5.48
9. Average Bitumen content in %	**5.71**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	02.11.2018
Type of material & Purpose:	**BC**	Date of testing:	02.11.2018
		Oven Dry Wt.(gms):	800.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	100	100.0	12.50	87.50	79 - 100
9.50	65	165.0	20.63	79.38	71 - 95
4.75	135	300.0	37.50	62.50	53 - 71
2.360	100	400.0	50.00	50.00	42 - 58
1.180	85	485.0	60.63	39.38	34 - 48
0.600	85	570.0	71.25	28.75	26 - 38
0.300	45	615.0	76.88	23.13	18 - 28
0.150	60	675.0	84.38	15.63	12 - 20
0.075	75	750.0	93.75	6.25	4 - 10
Pan	50.0				
Total	800.0				

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

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Project	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Nagineni Muniswmynaidu Krishnamurthy		
Proposed Use	BC	**Date of Sampling**	**01.11.2018**
Sample Location	At plant	**Date of Testing**	**01.11.2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	425.00	458.00	426.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	300.00	360.00	336.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	125.00	98.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	29.41	21.40	21.13	
5	Average Aggregate impact value	(%)	23.98			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Nagineni Muniswmynaidu Krishnamurthy

Type of Material	BC	**Proposed Use**	**BC**
Sample Location	At plant	**Date of Sampling**	**01.11.2018**
		Date of Testing	**01.11.2018**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	626	74	552	65
16.0	12.5	1210	110	1100	85
12.5	10.0	510	70	440	60
10.0	6.3	500	50	450	50
Total		**2846**	**304**	**2542**	**260**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.68	
Elongation Index(%):	10.23	
Combined FI+EL (%)	20.91	

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	1.Improvement of roads and drain at jakkur lake back side roads in ward no 05 byatarayanapura sub division 2. Providing street lights in ward no 05 surrounding areas byatarayanapura sub division 3. Improvement of roads and drain at royal enclave in ward no 05 byatarayanapura sub division 4. Improvement of roads and drain at srirampura railway parlel road to jakkur railway gate in ward no 05 byatarayanapura sub division 5. Improvement of roads and drain at srirampura cross road in ward no 05 byatarayanapura sub division 6. Improvement of roads and drain at bellahalli surrounding area in ward no 05 byatarayanapura sub division 7. Development of roads and drain at shivaramakaranthanagara 2nd stage cross roads in ward no 05 byatarayanapura sub division 8. Improvement of roads and drain at jakkur cross roads in ward no 05 byatarayanapura sub division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Nagineni Muniswmynaidu Krishnamurthy
Date of Testing :	02.11.2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.765	0.743	0.755
Final weight of plate after application of tack Coat (c)	Kg	0.788	0.766	0.778
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.250	0.256	0.251
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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